USSR

UDC 621.351

ROMANOV, V. V., ZIYATLY, V. B., AGACUSEYNOV, K. YU.

"Internal Resistance of Chemical Current Sources"

Uch. zap. Azerb. [illegible]t nefti i khimii (Scientific Reports of the Azerbaydzhan Petroleum and Chemistry Institute), 1971, series 9, No 6, pp 89-92 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L223)

Translation: As a result of analyzing the laws of change in the internal resistance of chemical current sources it was established that the internal resistances determined for any current strength are unsuitable for calculations for other values of the discharge current. The measurements show that different chemical current sources have a different nature of internal resistance with respect to alternating currents. Along with the active component, the internal resistance always contains a reactive component. The total internal resistance as a function of frequency can have a capacitive-inductive, purely inductive or purely capacitive nature.

1/1

ROMANOV, V. V.

Atmospheric Physics

JPRS 55027

26 January 1972

SCREENING EFFECT OF THE CONTINENTS DETERMINING ISOTOPIC COMPOSITION OF ATMOSPHERIC MOISTURE

UDC 550.42

[Article by V. N. Soyfer, V. V. Romanov, N. K. Gastilina, and Ye. I. Roslyy, presented by Academician G. Y. Marchuk on 29 December 1970: "Screening Effect of the Continents Determining Isotopic Composition of Atmospheric Moisture", Moscow, Doklady Akademii Nauk SSSR, Geofizika, Russian, Vol 201, No 1, 1971, submitted 21 December 1970, pp 78-81]

Investigations of the quantitative relationships of the fallout of tritium on the North American and Eurasian continents, which began a little more than a decade ago abroad, chiefly in the USA [Reference 1] and in our country [Reference 2], have made it possible to establish, in particular, the continental effect, which is, to a considerable degree, episodic in nature. In ascribing great significance to the natural isotope indicators (primarily trium, and also deuterium, and oxygen-18) in the study of the global moisture cycle and the world resources of fresh waters, the World Meteorological Organization (WMO) and the International Atomic Energy Agency (IAEA) have combined the efforts of individual laboratories within the framework of the "World service of hydrogen and oxygen isotopes in precipitation", having included this work in the program of the International Hydrological Decade.

Since the second half of 1969, throughout the existing network of stations of the Hydrometeorological Service of the USSR, systematic observations have begun of the content of tritium in atmospheric precipitation, with subsequent analysis. A network of stations for the collection of precipitation, organized in the Soviet Union, supplements the worldwide network of the IAEA/WMO (Figure 1).

The first results of the content of tritium in atmospheric precipitation are given in our article. Data on the fallout of tritium are given in conditional units, the concentration of tritium is calculated relative to the laboratory standard, and is also given in conditional units. The measurements were conducted with a device described earlier [Reference 4], the volume of the sample amounted to 0.5 liters or less, and the decomposition of the

USSR

UDC 620.197.8

BELYAKOV, V. Ye., ROMANOV, V. V., Moscow, Pedagogical Institute imeni V. I. Lenin

"The Influence of Anions Upon the Long-Term Strength of Magnesium Alloy MA2-1"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 4, 1971, pp 27-30

Abstract: The rate of destruction of magnesium alloys in stress corrosion depends upon the nature of the anion composition of the solutions; here it is assumed that the mechanism of metal destruction is tied exclusively to corrosive cracking, but at the same time the influence of other factors is also possible. The article deals with a study of the influence of some anions of neutral salt solutions upon the long-term strength of magnesium alloy Ma2-1, particularly upon corrosive cracking and purely corrosive damages. In solutions containing sulfate, nitrate, acetate, and chloride ions, the mechanism of long-term strength loss of the alloy is linked predominantly to corrosive cracking, in a carbonate solution it is linked to corrosive cracking and purely corrosive damages, while in phosphate and fluoride solutions it is linked to purely corrosive damages. 1 figure. 10 references.

1/1

USSR

UDC 621.394.625

ROMANOV, V. V., KUZNETSOV, Yu. A.

"Status and Trend of Growth of Terminal Equipment for Transmission of Discrete Information"

V sb. Radioelektron. v nar. kh-ve SSSR (Radioelectronics in the National Economy of the USSR--Collection of Works), Ch. 2, Kuybyshev, 1970, pp 340-344 (from Rzh--Elektrosvyaz', No 4, Apr 1971, Abstract No 4.64.293)

Translation: Requirements are formulated for contemporary terminal telegraphic equipment. It is shown that many foreign firms have produced a series of electromechanical equipment in which the number of mechanical units is reduced to a minimum. Up to 70 percent of the functions are fulfilled with the aid of electronic circuits. Equipment of this type produced by U.S., French, and Yugoslav firms is briefly described. B. V.

1/1

USSR

UDC 620.197.8

BELYAKOV, V. YE., PUSHKINA, S. V., and ROMANOV, V. V., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR, Moscow

"Effect of the pH of the Medium on the Lasting Durability of the NA2-1 Alloy"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 5, 1970, pp 7-10

Abstract: A study was made to determine quantitatively the specific weight of the factors destructive of and tending to shorten the lasting durability of the MA2-1 magnesium alloy. There are two such factors: corrosion splitting and purely corrosive destruction. These factors are active when the metal is in electrolyte solutions, especially chloride solutions, and their activity is a function of the pH of the solutions. The MA2-1 alloy has the following chemical composition: 4.45% Al; 1.12% Zn; 0.56% Mn; 0.006% Fe; 0.07% Si; 0.0011% Ni; 0.002% Be; and the GST standard Mg. It was prepared for the experiments in the form of partially finished sheets 1.5 mm thick. Results of the experiments are given in the form of curves showing the variations of differ-

1/2

USSR

BELYAKOV, V. YE., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 5, 1970, pp 7-10

ent parameters of the alloy as functions of the pH. It is found that solutions 0.1 normal for chloride ion cause a marked loss in lasting durability of the alloy; this was determined to be 33 hours. The pH for such solutions has a strong effect on the mechanism and extent of the loss, chiefly through the mechanism of purely corrosive destriction.

2/2

USSR

UDC 681.327

OMELIN, V. M., OKHOTIN, S. N., ROMANOV, V. V., Engineers, PETRENKO, A. I., Doctor of Technical Sciences, FESECHKO, V. A., Candidate of Technical Sciences

"All-Purpose Graphical Data Input Device for a Digital Computer"

Moscow, Pribory i Sistemy Upravleniya, No 2, February 1971, pp 6-7

Abstract: A graphical data conversion device designed for converting graphical documents to code has been developed at the All-Union Scientific Research Institute of Exploration Geophysics jointly with the Department of Technical Electronics of Kiev Polytechnical Institute. Its technical parameters make it possible to read a variety of graphical data including single curves, families of curves, and various sets of outlines. A block diagram of the device, its operating time diagram, data allocation in memory, and basic technical specifications of the device are presented. It is pointed out that in contrast to the Luch and Graf graphical data input devices based on the same principle of color recognition, the present design achieves parallel color recognition so that it can read six colors simultaneously -- black, red, blue, green, yellow, and one other arbitrary color. The basic units of the device are an electromechanical scanner with an optical system and tape drive, a video pulse shaper,

1/1

USSR

OMELIN, V.M., et al., Pribory i Sistemy Upravleniya, No 2, February 1971, pp 6-7

a color separating unit, encoding and output units, and a monitoring and control unit.

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF PH ON THE CORROSION FATIGUE OF THE MAGNESIUM ALLOY MA,2,1 -U-

AUTHOR-(04)-BELYAKOV, V.E., PUSHKINA, S.V., PROKIN, A.K., ROMANOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKHAN. MAT., 1970, 6, (1), 38-41

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CORROSION FATIGUE, SOLUTION ACIDITY, METAL REMOVAL, MAGNESIUM ALLOY/(U)MA21 MAGNESIUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1799 STEP NO--UR/0369/70/006/001/0838/0041

CIRC ACCESSION NO--AP0129167

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129167

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE PH OF THE CORROSIVE MEDIUM ON THE CORROSION FATIGUE OF MG ALLOY MA-2-1 IN SOLUTIONS HAVING A STRENGTH OF SIMILAR TO 0.1 N WITH RESPECT TO CL PRIME NEGATIVE IONS WAS STUDIED. THE OVER ALL LOSS OF FATIGUE STRENGTH IN THESE MEDIA WAS DIVIDED INTO TWO COMPONENTS: LOSS OF STRENGTH DUE TO CORROSION FATIGUE PROPER, AND LOSS OF STRENGTH ARISING FROM THE REDUCTION IN THE CROSS SECTION OF THE CORRODED SAMPLE. FOR PH VALUES BETWEEN 1.3 AND 4.0 THE LOSSES AROSE MAINLY FROM THE SECOND FACTOR; FOR PH VALUES BETWEEN 4 AND 14 THEY AROSE MAINLY FROM THE FIRST FACTOR.

UNCLASSIFIED

Magnesium

USSR

UDC: 620.197.8

BELYAKOV, V. YE., PUSHKINA, S. V., PROKIN, A. K., and ROMANOV, V. V., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"pH Effect on the Corrosion Fatigue of MA-2-1 Magnesium Alloy"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 1, Jan-Feb 70, pp 38-41.

Abstract: A determination was made of the effect of pH on the loss of cyclic strength in the MA-2-1 alloy in working media containing chlorine ions (0.1 N). The composition of the alloy is: 4.45% Al; 1.12% Zn; 0.56% Mn;0.006% Fe; 0.07% Si; 0.0011% Ni; 0.002% Be; the balance Mg. For the study, the alloy was in the form of 1.5-mm sheet. In 0.1 N chloride solutions, the MA-2-1 alloy appears to have low corrosion fatigue strength. In solutions with pH=4 to 14 the alloy's failure is attributed to corrosion fatigue; within this range pH does not control the extent of loss in cyclic strength. At pH=4 to 1.3, the loss in cyclic strength occurs basically due to the reduction in the cross section of the specimen.

1/1

USSR

UDC 621.352

ROMANOV, V. V., ZUYATLY, V. D., and AGAGUSEYNOV, K. YU.

"Determining the Components of Internal Resistance of Chemical Sources of Current"

Uch. zap. Azerb. in-t nefti i khimii (Scientific Notes. Azerbaydzhan Institute of Petroleum and Chemistry), 1972, ser. 9, No 1, pp 69-74 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18L149

Translation: The author describes the calculation of components of internal resistance of chemical sources of current. Frequency dependence of internal resistance is presented for accumulators of all known electrochemical systems, as well as for cells and batteries in the manganese-zinc system. It is shown that the components of internal resistance R, x_1 and x_c can be determined from the curves for their frequency dependences as a function of the total internal resistance. Authors' abstract.

1/1

Conferences

R

USSR UDC 621.73:001.3

LERNER, P. S., PENCHUKOV, V. M., ROMANOV, Ye. S., and SHLYPER, V. B.

"Scientific and Technical Conference on Some Problems of the Theory and Practice of Metalworking by Pressure"

Moscow, Kuznechno-shtampovochnoye Proizvodstvo, No 7, Jul 70, pp 48-49

Abstract: The Scientific and Technical Conference on Problems of the Theory and Practice of Metalworking by Pressure was sponsored by the Tula Polytechnical Institute jointly with the Tula Chapter of the Scientific and Technical Society of the Machinery Industry. The conference was attended by representatives of 16 institutions of higher learning of Moscow, Leningrad, Izhevsk, Rostov-on-Don, Tomsk, Chelyabinsk, and other cities, 10 scientific research institutes, and by representatives of plants in Leningrad, Moscow, Nikolayev, Ul'yanovsk, Riga, and elsewhere. The 54 reports presented at the conference highlighted individual problems of the theory of plastic working of metals, research on existing technology and the development and introduction of new technology in production. The conference was conducted in plenary sessions and sections on sheet metal stamping and closed impression die forging. Among the topics discussed were the following: effect of anisotropy on the process of plastic deformation (S. P. Yakovlev, V. F. Kuzin, V. M. Lyalin), development of rational geometric

1/3

USSR

LERNER, P. S., et al, Kuznechno-shtampovochnoye Proizvodstvo, No 7, Jul 70, pp 48-49

parameters of tools to ensure uniform deformation (S. A. Valiyev, V. M. Chudin), inhomogeneity of the buildup of deformation in nonstationary plastic flow (I. P. Renne, N. I. Deplov, E. A. Boyko), plastic flow in axisymmetric deformation (S. P. Yakovlev, V. M. Lyalin), rational technology of reverse and rotational extrusion (M. N. Tsypina, L. G. Yudin, Yu. M. Filigarov), drawing and reducing the wall thickness (I. P. Renne, V. F. Zimin, P. S. Lerner); test data on drawing box-type parts of great width (V. P. Romanovskiy); problems of failure and reserve of plasticity of materials (V. L. Kolmogorov, V. I. Ural'skiy, I. A. Sokolov, V. S. Plakhotin); study of deformation inhomogeneity (G. D. Del', V. A. Ogorodnikov, F. Kh. Tomilov); the stress-strain state in deep drawing of cylindrical bodies (I. A. Sokolov, S. O. Kukutsa, V. I. Ural'skiy); selecting diagrams of forming cylindrical hollow billets by rotary rolls of a given profile (N. V. Potekushin, L. I. Artmeladze, Ye. M. Ravinskaya, A. N. Terent'yev); theoretical and experimental study of combined reverse deep drawing of aluminum parts with reducing wall thickness (A. A. Bebris, D. N. Gol'dberg); changes in power parameters of drawing under liquid friction conditions (A. S. Ganzov, V. I. Kazachenok, A. A. Churakova); experimental extrusion of billets and its

USSR

LERNER, P. S., et al, Kuznechno-shtampovochnoye Proizvodstvo, No 7, Jul 70, pp 48-49

combination with upsetting, sizing, etc. (V. I. Zaydman); and the effect of superplasticity and its potential use in the technology of metalworking by pressure (Ya. M. Okhrimenko, O. M. Smirnov).

3/3

USSR

ROMANOV, Yu. Captain

"Learn to Master Yourself"

Moscow, Krasnaya Zvezda, 29 May 71, p 3

Abstract: Autogenic training, the method of auto-suggestion first proposed by I. Schultz, a German, 40 years ago, has become popular in the USSR lately. It is primarily a method of treating illnesses, but has been finding increasing application in other fields such as sports. The essence of the method, as used by V. Raykin, psychotherapist lecturing at the Institute of Atomic Energy imeni Kurchatov and G. Belyayev, a Leningrad psychotherapist, is to follow a rather long series of exercises which give the subject the ability to "see with eyes closed," that is, visualize a certain person, or, especially, one's self, in a certain condition. As the exercises progress, the condition gradually is realized. These men have proposed that auto-suggestion could be instituted as a system of mental exercise parallel to established physical training. Others, such as Professor M. Lebedinskiy, disagree with this proposal and find the method is useful only in combination with "functional training" in the desired area. It is pointed out that auto-suggestion is very old, having
1/2

USSR

ROMANOV, Yu., Krasnaya Zvezda, 29 May 71, p 3

been in use in ancient Greece and Egypt, and that ordinary persons do something similar in many cases without being fully aware of it. At the present time, the method is not fully developed and its exact applications are not clear, but there is general agreement that the trend is promising. In military training, possible applications are many, for example in overcoming excitement and fear in parachute jumps, and so forth. Auto-suggestion training recently began on Polish television broadcasts, and is in use in other countries such as Japan. The future will tell exactly to what extent this method can teach people to develop their broad capacities.

2/2

AN0022379 R

UR9008

AUTHOR-- ROMANOV, YU., CAPTAIN

TITLE-- THE FIRE OF "KATYUSHAS"

NEWSPAPER-- KRASNAYA ZVEZDA, FEBRUARY 4, 1970, P 2, COLS 6-8.

ABSTRACT-- THE ARTICLE GIVES A BRIEF HISTORY OF A SOVIET RECOILESS WEAPON WHICH, DURING THE 2ND WORLD WAR, WAS KNOWN AS "KATYUSHA". CREDIT FOR ITS DEVELOPMENT IS GIVEN TO N. I. TIKHOMIROV, V. A. ARTEM,YEV, B. S. PETROPAVLOVSKIY, I. T. KLEYMENOV, G. E. LANGEMAK, AND I. I. GVAY. IN 1941, KATYUSHAS WERE KNOWN AS BM-13 AND BM-8. BM-13 RECOILESS MISSILES WERE LAUNCHED FROM TRUCK-MOUNTED LAUNCHERS. THE RECOILESS MISSILES WEIGHED 42 KM AND HAD A RANGE OF 8.5 KM. SIXTEEN ROCKETS COULD BE FIRED SIMULTANEOUSLY. AFTER THE NR 1 KATYUSHA, THE "BM-13", THERE WERE DEVELOPED THE "BM-8", CAPABLE OF FIRING 36 ROCKETS, AND THE "BM-8-48", CAPABLE OF FIRING 48 ROCKETS. THE NEXT MODEL WAS MOUNTED ON A LIGHT-TANK CHASSIS. IT COULD FIRE 24 ROCKETS AND WAS KNOWN AS BM-8-24. IN JUNE, 1942, MORE POWERFUL ROCKETS, THE "M-20" AND "M-30" WERE READY. THE FIRST WEIGHED 57.6 KG AND WERE LAUNCHED FROM THE "BM-13". THE LATTER WEIGHED 72 KM AND WAS LAUNCHED FROM A SPECIALLY DESIGNED LAUNCHER, "THE M-30 FRAME".

1/2 19630618 4

AN0022379

EARLY IN 1943, 300-MM FRAGMENTATION ROCKETS WEIGHING 92.5 KG BECAME AVAILABLE. THEY WERE NICKNAMED "VANYUSHAS" OR "ANDRYUSHAS". THEY WERE LAUNCHED FROM THE "BM-31-12" LAUNCHER WITH 12 GUIDE RAILS. THE MODIFIED "VANYUSHA", THE M-31-UK, WAS PRODUCED IN 1944. LETTERS "UK" STOOD FOR "IMPROVED PATTERN".

mk

2/2

19630619

USSR

UDC 533.951

ROMANOV, YU. A., Gor'kiy State University imeni N. I. Lobachevskiy

"Plasma Waves in Multilayer Structures"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 9, Sep 72, pp 1804-1810

Abstract: The article obtains general dispersion equations for E and H waves in layered media with an arbitrary number of layers. The equations are valid, given spatial dispersion and layer inhomogeneity. General relations are found between the amplitudes of an incident, transmitted, and reflected wave. The resultant expressions are convenient for the consideration of electromagnetic waves in systems with an arbitrary number of layers, as well as for the numerical solution of problems of wave propagation in arbitrary, layered media. The peculiarities of plasma waves in periodic systems are studied, with allowance for thermal effects and plasma boundary spreading. Examples considered are quasistatic waves in a periodic structure consisting of cold plasma waves with permittivity ε_1 and ε_2, the case of thin transition layers, and low-temperature layers when time dispersion can be ignored in one layer and spatial dispersion of permittivity in the other.

1/1

Romanov, Yu. A.

JPRS 59205

6-73

3

SESSION XVI

XVI-1. EPITAXIAL MULTILAYERED SILICON STRUCTURES OBTAINED BY SUBLIMATION IN A VACUUM

[Article by R. G. Loginova, M. I. Ovsyannikov, Yu. A. Romanov, Gor'kiy; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 220]

1. The method of silicon sublimation in a vacuum was used to obtain epitaxial multilayered structures comprising p-n type layers with a number of layers to 50. The thickness of the layers varied from 100 Å to 1 micron.

2. Electron diffraction and electron microscopy studies of the structures obtained were performed.

3. Studies were made of the nucleation and distribution of growth defects in multilayered silicon structures. As a rule, the nucleation of the defects take place at the interfaces of the layers. The causes of the given phenomenon are discussed.

4. The mechanism of the discovery of individual layers in epitaxial multilayered structures by the etching method is discussed.

USSR

BAUM, I. V.; GORBATENKO, M. V.; ROMANOV, Yu. A. (Lebedev Physics Institute, USSR Academy of Sciences)

"Dynamics of Matrix Space Taking into Account Third-Order Terms in the Lagrangian"

Moscow, Teoreticheskaya i Matematicheskaya Fizika; March, 1971; pp 338-47

ABSTRACT: The general properties of the dynamics of matrix space, formulated in two previous issues of the same journal (January, 1969; p 222; March, 1970; p 183) by Gorbatenko and Romanov, are used in order to derive the Lagrangian, taking into account the second- as well as third-order terms in the expression for the magnitude of the deviation from the vacuum state. It is proven that all cubic terms in the expressions for physical quantities can be eliminated by means of a suitable invariant transformation. This corresponds to the absence of terms proportional to ψ^3 in the similar expressions of the spinor theory.

The article includes 39 equations. There are two bibliographic references.

1/1

UDC:669.184.244.66

USSR

TURKENICH, D. I., ZIN'KO, B. F., and ROMANOV, YU. A.

"Influence of Blow Parameters on Reaction Rate of Decarburization in a Converter"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 108-116

Translation: The influence of oxygen consumption and position of the tuyere on the rate of oxidation of carbon and degree of assimilation of oxygen by the decarburization reaction in the converter are studied. The established experimental dependences cannot be explained using the criteria based on the gas dynamic similarity of the velocity fields.

An attempt is made to explain these phenomena using the peculiarities of mass transfer of oxygen in the converter bath. 7 figures; 12 biblio. refs.

1/1

USSR

UDC: 537.312.62

PASHITSKIY, E. A. and ROMANOV, Yu. A.

"Plasma Waves and Superconductivity in Quantized Semiconducting (Semimetallic) Films and Laminated Structures"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol. 15, No. 10, October 1970, pp 1594-1606

Abstract: The authors consider the problem of acoustical and surface plasma waves through the use of the Green temperature functions. By means of these functions, the collective or dynamic effects of delay and Coulomb interaction of the plasma particles can be correctly considered, and an explicit, if approximate, expression can be obtained for the critical temperature of the superconducting transition in quasi-two-dimensional laminated structures. The authors begin their analysis by considering the collective oscillations of a degenerate electron plasma -- or a hole plasma in a p-type semiconductor -- in a thin film bounded on both sides by a uniform medium with a specified dielectric constant and give the dispersion equation for the oscillations in such a system. This

USSR

PASHITSKIY, E. A., et al, Ukrainskiy Fizicheskiy Zhurnal, Vol. 15, No. 10, October 1970, pp 1594-1606

equation is simplified by assuming that the spatial dispersion in the transverse direction with respect to the plane of the film can be neglected. The specific non-phononic superconduction mechanism for films and "sandwich" structures is examined.

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--UNIFORM STATES OF THE MATRIX SPACE IN THE COVARIANT THEORY OF SPINOR FIELD -U-

AUTHOR-(02)-GORBATENKO, M.V., ROMANOV, YU.A.

R

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 2, PP 183-190

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPINOR, PERTURBATION, ELECTRON POSITIRON PAIR, LINEAR APPROXIMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0324 STEP NO--UR/0646/70/003/002/0183/0190

CIRC ACCESSION NO--AP0129556

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV7C

2/2 018

CIRC ACCESSION NO--AP0129556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DETAILED DEDUCTION AND ANALYSIS HAVE BEEN MADE OF ALL FOUR TYPES OF SOLUTIONS, CORRESPONDING TO THE UNIFORM STATES OF MATRIX SPACE WHICH WAS INTRODUCED BY THE AUTHORS (1) IN CONSTRUCTING THE COVARIANT THEORY OF SPINOR FIELD. IN ORDER TO CHOOSE THE VACUUM TYPE FROM THESE TYPES OF UNIFORM STATES, THE DYNAMICS OF LINEAR PERTURBATIONS OF THE UNIFORM STATES IS CONSIDERED AND IT IS PROVED THAT ELECTRON POSITIRON STATES ARE CONTAINED IN THE NEIGHBOURHOOD OF THE MAJORANA SYSTEM OF DIRAC MATRICES ONLY. IT FOLLOWS THAT IT IS THIS SYSTEM WHICH DESCRIBES THE VACUUM STATE OF MATRIX SPACE. THE MAJORANA SYSTEM WAS USED IN (1) IN ORDER TO CONSTRUCT THE LINEAR APPROXIMATION FOR THE LAGRANGIAN DYNAMICS OF MATRIX SPACE.

FACILITY: FIZICHESKIY INSTITUT IM. P. N. LEBEDEVA AKADEMII NAUK SSSR.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--INVARIANCE GROUPS AND DIFFERENTIATION IN MATRIX SPACE THEORY -U-

AUTHOR-(02)-GORBATENKO, M.V., ROMANOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL. 190, NO. 4, 1 FEB 70, PP 805-808

DATE PUBLISHED--01FEB70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--MATHEMATIC MATRIX, MATHEMATIC SPACE, VECTOR, TENSOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0020/70/190/004/0805/0808

PROXY REEL/FRAME--1993/0464

CIRC ACCESSION NO--AT0113366 UNCLASSIFIED

2/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0113366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW COVARIANT APPROACH TO THE THEORY OF A SPINOR FIELD PRESENTED BY THE AUTHORS IN A PREVIOUS ARTICLE REQUIRED THE INTRODUCTION OF THE NOTION OF A MATRIX SPACE; THE BASIC PROPERTIES OF A MATRIX SPACE ASSOCIATED WITH THE EXISTENCE OF INVARIANCE GROUPS ARE DISCUSSED HERE. RULES ARE ESTABLISHED FOR THE DIFFERENTIATION OF MATRIX TNESORS. FOUR 4 TIMES 4 MATRICES A PRIMEALPHA (X) ARE GIVEN AT EACH POINT OF A RIEMANN SPACE OF THE GENERAL THEORY OF RELATIVITY. IF THEY ARE TRANSFORMED AS COMPONENTS OF A 4 VECTOR UNDER A TRANSFORMATION OF COORDINATES, A PRIMEALPHA (X) IS CALLED A MATRIX VECTOR. A MATRIX TENSOR WITH AN ARBITRARY NUMBER OF CONTRAVARIANT AND COVARIANT INDICES IS DEFINED ANALOGOUSLY. ALGEBRAIC OPERATIONS PERMISSIBLE FOR MATRIX TENSORS INCLUDE MATRIX MULTIPLICATION, ADDITION, AND COMPLEX CONJUGATION. THE MATRIX SPACE IS DEFINED SUCH THAT THE MATRIX VECTOR Y PRIMEALPHA (X) IS GIVEN IN RIEMANN SPACE SATISFYING THE RELATIONSHIP: (Y PRIMEALPHA (X), Y PRIMEBETA (X)) SUBPOSITIVE EQUALS 2G PRIMEALPHABETA (X) TIMES E; WHERE Y PRIMEALPHABETA (X) IS A METRIC TENSOR. IT IS NOTED THAT FOR A GIVEN G PRIMEALPHABETA (X) THE EQUALITY (1) DEFINES A SET OF DIRAC MATRICES WITH AN ACCURACY UP TO AN ARBITRARY UNIMODULAR S(X) TRANSFORMATION. Y PRIMEALPHA YIELDS Y PRIMEALPHA (X) EQUALS S(X)Y PRIMEALPHA (X)S PRIME NEGATIVE1 (X), DET (S(X)) EQUALS 1.

UNCLASSIFIED

3/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0113366

ABSTRACT/EXTRACT--OF THE 30 PARAMETRIC S TRANSFORMATIONS, THOSE PARTICULAR TRANSFORMATIONS T(X) Y PRIMEALPHA (X) YIELDS Y PRIMEALPHA (X) EQUALS T(X)Y PRIMEALPHA (X)T PRIME NEGATIVE1 (X), DET (T(X)) EQUALS 1 ARE FOUND WHICH DO NOT DESTROY ANY ALGEBRAIC RELATIONSHIPS BETWEEN MATRIX TENSORS AND CAN THEREFORE BE CALLED TRANSFORMATIONS OF THE REPRESENTATION OF THE MATRIX TENSORS WHICH ARE IN NO WAY ASSOCIATED WITH THE SELECTION OF THE COORDINATE SYSTEM. IT IS NOTED THAT ALGEBRAIC RELATIONSHIPS CAN BE RETAINED UNDER A PARALLEL TRANSLATION OF SPIN TENSORS ONLY BY INCREASING THE NUMBER OF TYPES OF SPINOR INDICES UP TO 8 IN THE GENERAL CASE.

FACILITY: PHYSICS INSTITUTE IMENI P. N. LEBEDEV OF THE ACADEMY OF SCIENCES USSR, MOSCOW.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CLINICAL FEATURES SPECIFIC TO HONG KONG A SU82 INFLUENZA IN 1969 -U-

AUTHOR-(05)-ZLYONIKOV, D.M., BEIYAYEVA, N.M., ROMANOV, YU.A., YEVDOKIMOV, N.M., CHEPIK, YE.B.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 5, PP 97-102

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INFLUENZA VIRUS, SEROLOGIC TEST, GAMMA GLOBULIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0528 STEP NO--UR/0497/70/048/005/0097/0102

CIRC ACCESSION NO--AP0124224

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CLINICAL STUDY OF 684 PATIENTS IWTH SEROLOGICALLY CONFIRMED DIAGNOSIS DURING THE EPIDEMICS OF HONG KONG S SUB2 INFLUENZA IN LENINGRAD REVEALED NO ESSENTIAL DIFFERENCES IN THE COURSE OF A SUB2 INFLUENZA OUTBREAKS OF THE PRECEEDING YEARS. THE 1969 HONG KONG A SUB2 INFLUENZA OUTBREAK WAS CHARACTERIZED BY MODERATE INTOXICATION AND CATARRHAL SYMPTOMS. THE CLINICAL PICTURE OF INFLUENZA WAS CHARACTERIZED BY A PECULIARITY OF A NUMBER OF CLINICAL SYMPTOMS. SPECIFIC ANTI INFLUENZAL AGENST (ANTI INFLUENZAL GAMMA GLOBULIN, POLYGLOBULIN, ANTI INFLUENZAL SERUM) IN THERI EARLY EMPLOYMENT PRODUCED A DISTINCT THERAPEUTIC EFFECT. FACILITY: VSESOYUZNYY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT GRIPPA MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, KLINICHESKAYA INFEKTSIONNAYA BOL'NITSA IM. S. P. BOTKINA I 32 YA POLIKLINIKA ZHDANOVSKOGO RAYONA.

UNCLASSIFIED

UDC 531.51

USSR

GORBATENKO, M. V. and ROMANOV, YU. A., Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR, Moscow

"Invariance Groups and Differentiation in Matrix Space Theory"

Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 4, 1 Feb 70, pp 805-808

Abstract: A new covariant approach to the theory of a Spinor field presented by the authors in a previous article required the introduction of the notion of a matrix space; the basic properties of a matrix space associated with the existence of invariance groups are discussed here. Rules are established for the differentiation of matrix tensors. Four 4×4 matrices $A^{\alpha}(x)$ are given at each point of a Riemann space of the general theory of relativity. If they are transformed as components of a 4-vector under a transformation of coordinates, $A^{\alpha}(x)$ is called a matrix vector. A matrix tensor with an arbitrary number of contravariant and covariant indices is defined analogously. Algebraic operations permissible for matrix tensors include matrix multiplication, addition, and complex conjugation. The matrix space is defined such that the matrix vector $\gamma^{\alpha}(x)$ is given in Riemann space satisfying the relationship

$$[\gamma^{\alpha}(x), \gamma^{\beta}(x)]_{+} = 2g^{\alpha\beta}(x) \cdot E; \qquad (1)$$

1/2

USSR

GORBATENKO, M. V. and ROMANOV, YU. A., Doklady Akademii Nauk SSSR, Vol. 190, No. 4, 1 Feb 70, pp 805-808

where $\gamma^{\alpha\beta}(x)$ is a metric tensor. It is noted that for a given $g^{\alpha\beta}(x)$ the equality (1) defines a set of Dirac matrices with an accuracy up to an arbitrary unimodular $S(x)$-transformation

$$\gamma^{\alpha}(x) \to \gamma'^{\alpha}(x) = S(x)\gamma^{\alpha}(x)S^{-1}(x), \det [S(x)] = 1.$$

Of the 30 parametric S-transformations, those particular transformations $T(x)$

$$\gamma^{\alpha}(x) \to \gamma'^{\alpha}(x) = T(x)\gamma^{\alpha}(x)T^{-1}(x), \det [T(x)] = 1$$

are found which do not destroy any algebraic relationships between matrix tensors and can therefore be called transformations of the representation of the matrix tensors which are in no way associated with the selection of the coordinate system. It is noted that algebraic relationships can be retained under a parallel translation of spin-tensors only by increasing the number of types of spinor indices up to 8 in the general case.

2/2

Acc. Nr: AP0038055 Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 348-353

INSTABILITY OF SPATIALLY SEPARATED PLASMA BEAMS

Yu. A. Romanov, V. F. Dryakhlushin

The interaction and instability of two spatially separated homogeneous semi-infinite plasma beams are investigated in the kinetic and quasihydrodynamic approximations. The interface between the beams is assumed to be sharp and their temperatures identical. The boundaries of beam instability and the wave increments and also the nature of behavior of the excited wave field are determined. The dependence of the minimal drift velocity, at which oscillations arise, on the collision frequency in the plasma is investigated. It is shown that the wave increments may be quite large and comparable with the corresponding quantities for mutually penetrating beams.

REEL/FRAME
19731099

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--RESONANCE INTEGRALS OF THE FISSION OF URANIUM, PLUTONIUM, AND AMERICIUM ISOTOPES -U-

AUTHOR-(05)-PETRAZHAK, K.A., BAK, M.A., PETROV, YU.G., ROMANOV, YU.F., SHLYAMIN, E.A.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(CT), 359-60

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR FISSION, NUCLEAR RESONANCE, INTEGRAL FUNCTION, URANIUM, PLUTONIUM, AMERICIUM, FISSION CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1066 STEP NO--UR/0089/70/028/000/0359/0360

CIRC ACCESSION NO--AP0136486

UNCLASSIFIED

2/2 023 UNCLASSIFIED

CIRC ACCESSION NO--AP0136486 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FISSION RESONANCE INTEGRALS WERE DETD. TO BE PRIME233 U 850 PLUS OR MINUS 90, PRIME239 PU 330 PLUS OR MINUS 30, PRIME241 PU 550 PLUS OR MINUS 40, AND PRIME241 AM 21 PLUS OR MINUS 2 BARNS. THE FISSION RESONANCE INTEGRAL FOR PRIME235 U WAS TAKEN AS 274 PLUS OR MINUS 11 IN THE CALCNS.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ASPECTS OF TWO AND FOUR COMPONENT NEUTRINO THEORIES DURING AN EXAMINATION OF WEAK LEPTONIC AND SEMILEPTONIC PROCESSES -U-

AUTHOR-(02)-KERIMOV, B.K., ROMANOV, YU.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 57-61

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--LEPTON, NEUTRINO, MUON, RADIOACTIVE DECAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0946 STEP NO--UR/0139/70/013/002/0057/0061

CIRC ACCESSION NO--AT0105815

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0105815

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE EXAMN. OF THE WEAK LEPTONIC AND SEMILEPTONIC PROCESSES, THE 2 (CA 52:8765A) AND 4,COMPONENT THEORIES (CA 52:5146B) OF 2 NU WERE USED. ACCORDING TO THE 4,COMPONENT THEORY, AND CONTRARY TO THE 2,COMPONENT THEORY, THE MUON DECAY IS DUE TO THE V PLUS A INTERACTION.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INHIBITION OF THE OXIDATION OF ISOPRENE RUBBER BY QUINONE IMINES -U-

AUTHOR-(05)-RAEVSKIY, A.B., ROMANOVA, A.B., YESINA, T.I., SHISHKINA, V.V., KOVRIZHKO, L.F.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA, 1970, 29(3), 9-10

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OXIDATION INHIBITION, ISOPRENE, QUINONE, IMINE, SYNTHETIC RUBBER, EPR SPECTRUM, FREE RADICAL/(U)SKI3 POLYISOPRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0453 STEP NO--UR/0138/70/029/003/0009/0010

CIRC ACCESSION NO--AP0119389

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119389

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF SIMILAR TO 1.0PERCENT N, N-DIPHENYL,P,BENZOQUINONEDIIMINE (I) OR N,BETA,NAPHTHYL,P,BENZOQUINONEDIIMINE (II) TO SKI-3 (POLYISOPRENE RUBBER) IMPROVED ITS RESISTANCE TO OXIDN. AT 120DEGREES. EPR SPECTROSCOPY SHOWED THAT I AND II FORM, DURING HEATING, FREE RADICALS OF LARGE MOL. WTS., WHICH PARTICIPATE IN THE INHIBITION OF SKI-3 OXIDN.

FACILITY: VORONEZH, FILIAL VSES. NAUCH.-ISSLED., INST. SIN. KAUCH, IM. LEBEDEVA, VORONEZH, USSR.

UNCLASSIFIED

Acc. Nr. AP0053426 Abstracting Service: CHEMICAL ABST. Ref. Code: 0220 4R0039

110619c Acid-base properties of alkyl(aryl)fluorosilanes in nonaqueous media. Drozdov, V. A.; Kreshkov, A. P.; Romanova, A. D. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 104–9 (Russ). Conventional syntheses gave the following: Me_2EtSiF, b. 51°, d^{20} —, n_D^{20} — (n_D^{18} 1.3570); Me_2PrSiF, b. 77°, —, 1.3708; Me_2PhSiF, b. 155–7°, —, 1.5471; $(PhCH_2)SiMe_2F$, b_{24} 104°, 0.9743, 1.4838; $MeEt(PhCH_2)SiF$, b. 200–2°, 0.9663, 1.4792; $MePh(PhCH_2)SiF$, b. 117°, 1.0610, 1.5481; $MePh_2SiF$, b_{12} 164.5°, 1.077, 1.5482; Et_3SiF, b. 109–10°, 0.8392, 1.3906; Et_2PhSiF, b_3 77–8° 0.9837, 1.4880; $Et_2(PhCH_2)SiF$, b_{35} 96°, 0.9828, 1.4942; $PhSiFCl_2$, b. 157–9°, —, 1.5293; Ph_2SiFCl, b_{10} 131–2°, —, 1.5471; $MePhSiF_2$, b_4 108–10°, 1.2000, 1.5339; $PhSiF_2Cl$, b. 129–30°, —, 1.4575; $PhSiF_3$, b. 102–3°, 1.2270, 1.4106; and $PhSiCl_3$, b_{100} 225°, 1.2220, 1.5821; also: $MePh_2SiCl$, b_{45} 191°; $MePhSiCl_2$, b_{100} 223–5°; $MePh(PhCH_2)SiCl$, b. 149°; $Me_2PhSiCl$, b. 190–1°; and $Et_2PhSiCl$, b_9 100–2°. Ir spectral curves of 12 of these were shown and their thermodynamic acidity was detd. by potentiometric titrn. in dry MeOH and EtOH relative to dry HCl in the same solvents. The relative values of such acidity expressed in units of pK (—SiR_3) were, in MeOH and EtOH, resp.: Et_3SiF, 10.9, 10.0; $MeEt(PhCH_2)$-SiF 10.2, 9.56; Me_2PhSiF 9.55, 9.14; $MePh(PhCH_2)SiF$, 9.29, 8.80; and Me_2SiF, 10.43, 9.69. Unlike chlorosilanes, the substituent groups had considerable effect on the acidity of the fluorosilanes. This is ascribed to the low polarizability of these. G. M. Kosolapoff

REEL/FRAME
19830451

USSR

UDC: 669.891.053.2

PUTILIN, Yu. M., ROMANOVA, A. D., BAZAROVA, S. I., KUCHANSKAYA, O. F., SHIGANOVA, G. A.

"The Interaction of Fluorite with Aluminum Oxide with Heating"

Tekhnol. Mineral'n. Syr'ya [Technology of Mineral Raw Materials -- Collection of Works], Alma-Ata, 1972, pp 135-144 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G197, by G. Svodtseva).

Translation: The interaction of CaF_2 with Al_2O_3 was studied as they were heated in a vacuum (residual pressure about 0.1 mm hg) and in air in the 900-1300° temperature interval. The charge was made by a double decomposition reaction. In the 1200-1300° temperature interval, CaF_2 partially sublimates and simultaneously interacts with Al_2O_3 in an exchange reaction. The CaO liberated in this process forms Ca dialuminate with Al_2O_3. As the temperature is increased to 1200°, the quantity of dialuminate increases to 50%. A new compound appears, $5CaO \cdot 3Al_2O_3$. As the CaF_2 is heated with Al_2O_3 in air to 900-1100°, pyrolysis of CaF_2 occurs. At 1200° and higher, sublimation and

1/2

USSR

Putilin, Yu. M., Romanova, A. D., Bazarova, S. I., Kuchanskaya, O. F., Shiganova, G. A., Tekhnol. Mineral'n. Syr'ya, Alma-Ata, 1972, pp 135-144.

an exchange reaction between CaF_2 and Al_2O_3 are observed. The AlF_3 formed is hydrolyzed by water vapor in the air. The products of the secondary interaction of CaO and Al_2O_3 are: up to 1200° -- $CaO \cdot 2Al_2O_3$, over 1200° -- $5CaO \cdot 3Al_2O_3$. 4 tables, 6 biblio. refs.

2/2

USSR

UDC: 669.725.046.4

PUTILIN, Yu. M., ROMANOVA, A. D., FAVORSKAYA, L. V.

"Chemical Enrichment of Beryllium Flotation Concentrates by Sulfate-Fluoride Methods"

Tekhnol. Mineral'n. Syr'ya [Technology of Mineral Raw Materials -- Collection of Works], Alma-Ata, 1972, pp 48-57 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G187, by G. Svodtseva).

Translation: The effectiveness of sulfatizing as a method of chemical concentration of Be concentrates depends primarily on their mineralogical composition. The effectiveness of the process can be increased by the addition of fluorinating agents (NaF and Na_2SiF_6). Due to the decreased losses of Be, Na_2SiF_6 is more effective. The best indicators are produced for a concentrate containing 3.4% BeO. The improved concentrate contains about 6% BeO. 7 tables.

1/1

USSR

UDC: 669.725.053.4.068

PUTILIN, Yu. M., ROMANOVA, A. D., FAVORSKAYA, L. V.

"Influence of Aluminum on Extraction Separation of Beryllium from Fluoride Solutions"

Tekhnol. Mineral'n. Syr'ya [Technology of Mineral Raw Materials -- Collection of Works], Alma-Ata, 1972, pp 203-207 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1972, Abstract No 8G191, by G. Svodtseva).

Translation: Be was extracted with fatty acids of the C_7-C_9 fraction with a ratio of organic phase to aqueous phase of 1:1. It was established that at the equillibrium pH = 4.0-4.2, Al is extracted to 67%, the degree of extraction of Be varying slightly -- from 3.5 to 6%. The calculation factor for separation of Al and Be at pH 3.5-4.2 is 27-35. In order to study the behavior of Be in the presence of Al, solutions with molar ratios of Al and Be of 0.21:1 to 1.72:1 were used. The extractability of Be increases sharply in the presence of Al. As the molar ratio of Al to Be was increased from 0.21:1 to 1.72:1, the degree of extraction of Be increased from 32 to 68%. With extraction in three stages from a solution of fluorides, 97% of the Al and 83% of the Be go over into the organic phase. It is impossible to separate Al and Be from solutions of their fluorides by extraction with fatty acids. 4 tables, 5 biblio. refs.

1/1

USSR

UDC: 669.725.053.4.068

PUTILIN, Yu. M., ROMANOVA, A. D., FAVORSKAYA, L. V.

"Extraction Method of Separation of Beryllium from Impurities"

Tekhnol. Mineral'n. Syr'ya [Technology of Mineral Raw Materials -- Collection of Works], Alma-Ata, 1972, pp 196-202 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G190, by G. Svodtseva).

Translation: The conditions of extraction of Be and the possibility of its separation from the impurities Fe, Al and Mn are studied. Extraction was performed with an O:A ratio of 1:1. The extracting agent used was fatty acid, fraction C_7-C_9. Reextraction was performed with HCl solutions. The extraction of carboxylic acid from the fluoride solutions allows Be to be separated not only from Fe, but from the main mass of the Al as well. As the pH of the solution was increased from 2.5 to 9.1, the extraction of Fe in the reextract increased from 15.2 to 88.3%. The extractability of Al increases to 67.3%, while that of Be remains practically constant to pH = 10, at 5-6%. As the pH is increased to 11, extraction of Al into the reextract increases to 11.5%. Extraction directly from solution, produced by leaching with 5-10% H_2SO_4, does

1/2

USSR

Putilin, Yu. M., Romanova, A. D., Favorskaya, L. V., Tekhnol. Mineral'n. Syr'ya, Alma-Ata, 1972, pp 196-202.

not remove the impurities from the Be. In order to convert the Be to the fluoride form, the solution was treated with K by fluoride at pH 4.5 and 9. Purification by this method produced a product containing 80% BeO, with an extraction of 80.5%.

2/2

USSR

UDC: 669.725.053.4.094

PUTILIN, Yu. M., ROMANOVA, A. D., FAVORSKAYA, L. V.

"Acid Methods of Extraction of Beryllium from Phenacite Concentrate"

Tekhnol. Mineral'n. Syr'ya [Technology of Mineral Raw Materials -- Collection of Works], Alma-Ata, 1972, pp 74-82 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G189, by G. Svodtseva).

Translation: The process of extraction of Be from phenacite concentrate by treatment with HCl and C_2SO_4 under various conditions was studied. 30% HCl and 93% H_2SO_4 were used for decomposition. Leaching was performed at room temperature and at 92 ± 3°, time varying from 1 to 6 hours. The S:L ratio was varied as a function of acid consumption. It was established that HCl was ineffective. The BeO extraction was 3-4%. The effectiveness of treatment of the concentrates increases if they are roasted at various temperatures for 4 hours. For example, when 18% HCl is used in leaching, the extraction of BeO from a concentrate roasted at 400-800° is 7-11%. When the concentration is sulfatized with 60% H_2SO_4, with a consumption of 150% of the theoretically necessary quantity, the extraction of Be into the solution is 48.4%. Increasing

1/2

USSR

Putilin, Yu. M., Romanova, A. D., Favorskaya, L. V., Tekhnol. Mineral'n. Syr'ya, Alma-Ata, 1972, pp 74-82.

the acid consumption to 200% and its concentration to 90% increases extraction of Be to 55.8 and 78.7% respectively. 6 tables.

2/2

USSR

UDC 8.74

TYRSA, V. YE., DYUNYASHEV, V. V., KIRICHENKO, N. P., LEVTKIN, V. M., ROMANOVA, A. G.

"Analysis of the Accuracy of Analog-to-Digital Transformation with Automatic Exclusion of Systematic Errors"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Instruments and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 24, pp 103-107 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V452)

Translation: A study was made of the method of analog-to-digital transformation which can be realized in information-measuring devices. For a significant reduction (exclusion) of systematic measurement errors, an information channel is introduced into the block diagram of the converter which permits the code of a standard value in its physical essence an adequate unknown, to be received. On the basis of the analysis of the accuracy of the proposed method of analog-digital transformation, recommendations are made for selection of the optimal ratio of the unknown and the standard variables.

1/1

USSR

UDC 632.982.4

PIL'MENSHTEYN, I. D., BEZUGLYY, S. P., and ROMANOVA, A. I., All-Union Scientific Research Institute for Chemical Means of Plant Protection

"Use of Return Emulsions of Butyl Ether of 2,4-D for Prevention of Herbicide Drift in Aircraft Spraying"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 49-52

Abstract: Studies were conducted of the use of return emulsions of a butyl ether of 2,4-D to prevent herbicide drift in aircraft spraying for weed control. It was shown that concentrated return emulsions of butyl ether of 2,4-D are non-Newtonian liquids in which the coefficient of viscosity drops with increase in the rate of shift deformations (rate of outflow). The viscosity of concentrated return emulsions rises with increase in concentration of the disperse phase (of water) but to a known limit, i.e., to a concentration inducing the reversal of emulsion phases (the transformation of the return emulsion into a direct one). This limit depends on the amount and chemical nature of the emulsifier introduced into the emulsion concentrate.

1/2

USSR

PIL'MENSHTEYN, I. D., et al., Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 49-52

It was established that in intense mixing of concentrated return emulsions of butyl ether of 2,4-D, their viscosity grows considerably. This is explained by the decrease of the mean diameter of disperse phase particles and, probably by decrease of polydispersity of these particles. A simple mathematical expression was obtained which associates the fluidity of concentrated return emulsions with the mean diameter of disperse phase particles. Based on the conducted physicochemical investigations, the optimum formula of the 2,4-D butyl ether return emulsion concentrate and the procedure for preparation of the concentrated return emulsion having maximal viscosity were developed.

2/2

USSR

UDC 632.95

PIL'MENSHTEYN, I. D., REZUGLYY, S. F., ROMANOVA, A. I., POTOLOVSKIY, L. A., and GRUZDEV, B. V.

"A New Emulsifier for Pesticides - Calcium Dodecylbenzolsulfonate Derived from Tetrameric Propylene"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 2, Moscow, 1972, pp 145-150 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N517 by I. Pil'menshteyn)

Translation: Calcium dodecylbenzolsulfonate (I) synthesized in the All-Union Sci-Res Institute of Petroleum Products derived from tetrameric propylene reduces the consumption of OP-7 [a wetting agent of the alkyl phenol-ethylene oxide type] 3- to 4-fold in emulsifying concentrations of pesticides. Introduction of I into the latter greatly improves their emulsifiability due to decreased interphasial tension at the water-oil boundary.

1/1

USSR

UDC 531.383

LESTEV, A.M. and ROMANOVA, A.V., Leningrad Institute of Aviation Instrument Manufacture

"Gyrostabilizer Error Under Random Vibration"

Leningrad, Priborostroyeniye, No 4, 1971, pp 70-74

Abstract: A study was made of errors of a single-axis gyrostabilizer, under random vibration, due to a moment caused by frictional forces in bearing axes. The mathematical probability and variance of the stabilization angle was determined by the statistical linearization method. Equations were established for a gyroscopic stabilizer having a two-phase asynchronous stabilization motor and an angle transducer with linear characteristics. Relationships were established for relative positional angles, turning moments, damping coefficients, motor and reducer constants, and the moment due to frictional forces in the stabilization axes. A numerical example illustrated that errors due to frictional forces during vibration can reach significant levels. It was suggested that this fact should be considered when choosing parameters for gyroscopic stabilization systems.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--STRUCTURES OF INDIUM AND LEAD IN THE LIQUID PHASE -U-

AUTHOR--ROMANOVA, A.V., MELNIK, B.A.

R

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 101-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY ANALYSIS, LEAD, INDIUM, SPECIFIC DENSITY, MOLECULAR STRUCTURE, FLUID PHASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1279 STEP NO--UR/0185/70/015/001/0101/0106

CIRC ACCESSION NO--AP0107755
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107755

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURE OF FUSED METALLIC IN AND PB WAS STUDIED BY HIGH RESOLN. X RAY TECHNIQUE AT 160-400 AND 340-4000EGREES, RESP. IN OPPOSITION TO THE PUBLISHED DATA, THE EXPT. REVEALS A COMPLEX STRUCTURE OF MAX. AND, IN THE CASE OF PB, THE MAX. WAS SPLIT INTO A DOUBLET. THE MELTS HAD MICROREGIONS OF SHORT RANGE ORDER THAT CAUSED A NONUNIFORM D. OF THE SAMPLES.

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--STRUCTURES OF INDIUM AND LEAD IN THE LIQUID PHASE -U-

AUTHOR--ROMANOVA, A.V., MELNIK, B.A.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 101-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY ANALYSIS, LEAD, INDIUM, SPECIFIC DENSITY, MOLECULAR STRUCTURE, FLUID PHASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1279 STEP NO--UR/0185/70/015/001/0101/0106

CIRC ACCESSION NO--AP0107755

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107755

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURE OF FUSED METALLIC IN AND PB WAS STUDIED BY HIGH RESOLN. X RAY TECHNIQUE AT 160-400 AND 340-400DEGREES, RESP. IN OPPOSITION TO THE PUBLISHED DATA, THE EXPT. REVEALS A COMPLEX STRUCTURE OF MAX. AND, IN THE CASE OF PB, THE MAX. WAS SPLIT INTO A DOUBLET. THE MELTS HAD MICROREGIONS OF SHORT RANGE ORDER THAT CAUSED A NONUNIFORM D. OF THE SAMPLES.

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PREPARATION OF PARTIALLY SULFONATED POLYSTYRENE -U-

AUTHOR-(02)-AZERBAYEV, I.N., ROMANOVA, D.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 80-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYSTYRENE RESIN, CHLOROFORM, SULFONATION, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1863 STEP NO--UR/0360/70/020/002/0080/0083

CIRC ACCESSION NO--AP0123651

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLOCK POLYSTYRENE (I) WAS DISSOLVED IN CHCL SUB3 AND REACTED WITH 0.2-3.0 PARTS HSO SUB3 CL AT 20 OR 50DEGREES. THE PRODUCTS WERE PPTD. WITH C SUB7 H SUB16. THE INCREASE IN HSO SUB3 CL,I RATIO GAVE PRODUCTS WITH HIGHER ACID NOS. AND LOWER SOLY. IN ORG. SOLVENTS. THE PRODUCTS OBTAINED AT 50DEGREES WITH 0.8-3:1 HSO SUB3 CL,I RATIOS WERE ONLY PARTLY SOL. IN HCONME SUB2 AND SWELLED IN MEOH. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

ROMANOVA, E. A.

Radiation Biology

SO: JPRS 55100
4 FEB 72
UDC 582.282.232+576.852.29 (Hydrogenomonas):629.78

STUDY OF THE EFFECT OF FLIGHT FACTORS ON THE ZOND-8 AUTOMATIC STATION ON A CULTURE OF YEASTS AND AUGIL BACTERIA

[Article by E. A. Romanova, N. A. Maksimova, L. A. Silatskaya, A. L. Mashinskiy, Ye. A. Kratasyuk, K. Kovalenkova; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 6, 1971, submitted for publication 14 June 1971, pp 41-43]

Abstract: This paper gives the results of studying the yeast Candida tropicalis SK-4 and the bacterium Hydrogenomonas eutropha Z-1 which were aboard the automatic station Zond-8 during its lunar flight. The survival of yeast cells during flight and the physiological and biochemical properties of their subsequent generations remained unchanged. The survival of bacteria decreased by 5 percent in comparison with the control. Subsequent generations of bacteria tended to decrease their productivity during autotrophic cultivation, the level remaining within the limits of productivity variations under laboratory conditions. Bacterial radiosensitivity did not change after the flight.

In the biological experiments carried out earlier aboard Soviet and American spaceships and artificial earth satellites microorganisms were used for the most part as indicators for the biological dosimetry of cosmic radiation and commonly employed genetic objects (Jenkins, R. H. Zhukov-Verezhnikov, et al., 1962; N. V. Kovyazin, et al.; G. P. Parfenov and A. A. Lukin; N. N. Zhukov-Verezhnikov, et al., 1968).

During the period 20-27 October the Zond-8 automatic station, which flew around the moon on 24 October, carried a culture of the yeast Candida tropicalis SK-4 and a culture of Hydrogenomonas eutropha Z-1.

The selection of yeasts and hydrogenomonas as objects for investigations aboard the Zond-8 was dictated by the need for studying the tolerance to spaceflight factors of microorganisms promising as biological objects for

USSR

UDC 619:616.9-036.2

TARSHIS, M. G., ROMANOVA, G. I., and SHEVTSOV, A. M., All-Union Scientific Research and Technological Institute of the Biological Industry

"Criteria for Quantitative Evaluation of the Intensity of an Epizootic Situation"

Moscow, Veterinariya, No 11, 1972, p 56

Translation: It is relatively one-sided to evaluate the degree of infection of a particular area from the incidence of the disease or number of foci (affected localities). Yet the planning of control and preventive measures (specially calculation of the requirement for biological preparations) must be based chiefly on a comprehensive assessment of the epizootic situation in different parts of the nosological range.

By intensity of an epizootic situation we mean the intensity with which the disease is manifested among domestic and wild animals in a particular area and over a definite period of time. The intensity is characterized by temporal and spatial parameters.

We propose the index of epizooticity and fraction of affected localities as elements constituting the intensity of an epizootic situation. The index of epizooticity is the ratio of the number of years during which outbreaks were

1/3

USSR

TARSHIS, M. G., et al., Veterinariya, No 11, 1972, p 56

recorded in a given area to the number of years observed. It is calculated from the formula: I = t/T, where t is the years when the disease was recorded and T is the number of years observed. The theoretical limits of fluctuation of this criterion are from 0 to 1. We believe this index characterizes the dynamics of manifestation of a disease in time.

The fraction of affected localities (H) is the ratio of the number of affected localities (n) to the total number of inhabited localities (N) in a given area during the period of time under consideration (H = n/N). The theoretical limits of fluctuation of this criterion are from 0 to 1. It is used to judge the spatial distribution of the disease.

Thus, the intensity of an epizootic situation is expressed by the formula: W = IH, where W is the product of the index of epizooticity and fraction of affected localities.

A comprehensive quantitative evaluation of the intensity of an epizootic situation was applied to a statistical model of blackleg over a 20-year period in an A rank territory of an administrative oblast of the RSFSR to study the range of the disease and the prognosis. The limits of fluctuation of the intensity of the epizootic situation during the 20 years and by 5-year periods varied from 0 to 0.30 in 53 territories of the administrative rayons.

2/3

USSR

TARSHIS, M. G., et al., Veterinariya, No 11, 1972, p 56

The ranking of W showed a stable relationship by 5-year intervals and a stable interdependence by rayons. A comparison of W with the cartographic model of backleg for the oblast showed that W varied with the hypsometric characteristics of the rayons of the oblast.

Analysis of the dynamics of W made it possible to forecast the probable nature of this parameter during the next 5 years, assuming no change in environmental conditions or level of preventive measures used.

The intensity of an epizootic situation is undoubtedly the result of the realization of the preconditions for specific diseases whose detection and quantitative evaluation can be achieved by experimental and logical (mathematical) methods.

Thus, evaluation of the degree of infection of an area from the intensity of the epizootic situation is of value in elucidating the structure of the range of a disease, in forecasting it, and in planning differentiated control and prophylactic measures, vaccination in particular.

3/3

USSR

UDC 621.785.784:669.71'721'5'74

ZAKHAROV, V. V., LEVIN, L. I., and ROMANOVA, G. M., All-Union Institute of Light Alloys

"The Effect of 'Maturing' on Artificial Aging of the Al-Zn-Mn-Mg Alloy"

Moscow, Metallovedeniye, No 5, 1971, pp 61-62

Abstract: The effect of small additions of chromium (0.13%), zirconium (0.18%), and copper (0.17%) on the sensitivity of strength properties of an aluminum alloy with 4.5% Zn, 2.0% Mg, and 0.35% Mn to stoppage between hardening and artificial aging, ("maturing") was investigated. The investigation results are discussed with reference to the dependence of the yield point of artificially aged sheets of the alloys on a 4-hr maturing duration at 180°C. Small additions of zirconium and particularly of chromium significantly increase the sensitivity of strength properties of the aluminum alloy to maturing, but small additions of copper decrease its sensitivity. One figure, six bibliographic references.

1/1

USSR

UDC 547.26'118 + 547.341 + 547.345

NESTEROV, L. V., KREPYSHEYEVA, N. Ye., SABIROVA, R. A., and ROMANOVA, G. N.
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Academy of Sciences

"Derivatives of Phosphorous Acid. VIII. Reaction of the Dialkyl Trialkylsilyl Phosphites With Aldehydes and Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol XLI, No 11, 1971, pp 2,449-2,452

Abstract: Dialkyl acyl and tetraalkyl pyrophosphites are known to react with carbonyl compounds according to $(RO)_2POAc + R'R''CO \rightarrow (RO)_2P(O)C(OAc)R'R''$ (R = alkyl, R' = alkyl, aryl, R'' = H, alkyl and Ac = acyl or $P(OR)_2$). In this connection, the reactions of dialkyl trialkylsilyl phosphites with aldehydes and ketones were studied. These reactions were found to proceed along exactly the same lines when Ac = $SiAlk_3$, and the reactions proceed under much less rigorous conditions when Ac = acyl. The aldehydes react rapidly, with release of heat, while the ketones require preheating to 100°C. In all cases, there is formation of the dialkyl esters of α-(trialkylsiloxy)alkylphosphonic acids:

$$(RO)_2POSiAlk_3 + R'R''CO \rightarrow (RO)_2P(O)C(OSiAlk_3)R'R''.$$

USSR

NESTEROV, L. V., et al., Zhurnal Obshchey Khimii, Vol XLI, No 11, Nov 1971, pp 2,449-2,452

These compounds have been known only for a few years, and until now no satisfactory method had been devised for obtaining them. Physical data for the nine compounds obtained, along with laboratory procedures, are given in the paper.

2/2

USSR

UDC 551.511

ZVEREVA, S. V., ROMANOVA, G. P., SAMOYLENKO, A. V.

"Relationship Between the Transparency of the Atmosphere in Individual Regions of the USSR and Characteristics of Atmospheric Circulation"

Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), 1971, vyp. 38, pp 150-162 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B755)

Translation: The authors compare conditions of atmospheric transparency in different parts of baric formations on both terrestrial and altitude weather maps in the western sector of the Arctic (Kheys, Uyedineniye and Dikson Islands) and in the East Arctic (Chetyrekhstolbovaya and Dikson Islands), and also at Voyeykovo, Verkhoyansk, Yakutsk and Turukhansk stations.

In winter in the western sector of the Arctic in anticyclones and ridges, coefficients of transparency predominate which are greater than the average monthly value, while in cyclones and depressions the coefficients are less than the average monthly value. In anticyclones in summer, deviations of the coefficient of transparency from the average

1/3

USSR

ZVEREVA, S. V. et al, Tr. Leningr. gidrometeorol. in-ta, 1971, vyp. 38, pp 150-162

to either side are equally probable, while high values of the coefficient of transparency predominate in cyclones. An explanation is given for this distribution of the coefficient of transparency.

In Voyeykovo in anticyclones throughout the year, but especially in summer, high transparency of the atmosphere predominates, while in cyclonic circulation low transparency is the rule.

In the East Arctic there is pronounced repeatability of anticyclonic situations as compared with cyclonic, which is attributed to the proximity of this region to the quasistationary central arctic cyclone, resulting in very high values of the coefficient of transparency (Vrangel' Island).

In anticyclones of the East Arctic pronounced transparency of the atmosphere predominates throughout the year even in the face of high repeatability of low values of the coefficient of transparency, which is due to condensation haze in the winter and increased humidity in the summer. This is also seen in Eastern Siberia.

In cyclones of western trajectories in winter in the East Arctic, increased transparency of the atmosphere predominates, since such cyclones are mostly already occluded, high and dry, whereas cyclones from the

2/3

USSR

ZVEREVA, S. V. et al., Tr. Leningr. gidrometeorol. in-ta, 1971, vyp. 38, pp 150-162

Aleutian minimum give low transparency of the atmosphere. In summer cyclones of the East Arctic and Eastern Siberia, increased transparency of the atmosphere is usually observed, which is due to the continental origin of these cyclones.

No relation is detected between the transparency of the atmosphere and forms of the baric field on the AT_{700} map. An investigation is made of forms of the transparency of the atmosphere accompanying various forms of atmospheric circulation according to V. Ya. Vangengeym. Bibliography of 15 titles. Authors' abstract.

3/3

1/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ACCURACY OF DETERMINATIONS OF THE COORDINATES OF ARTIFICIAL SATELLITES -U-

AUTHOR--ROMANOVA, G.V.

R

COUNTRY OF INFO--USSR, CZECHOSLOVAKIA

SOURCE--IN: REDUCTION OF SATELLITE PHOTOGRAPHIC PLATES; COSPAR, COLLOQUIUM, PRAGUE, CZECHOSLOVAKIA, APRIL 22-27, 1968, PROCEEDINGS.

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, METHODS AND EQUIPMENT, NAVIGATION

TOPIC TAGS--SATELLITE TRACKING CAMERA, SPACE COORDINATE, POSITION FINDING, SATELLITE PHOTOGRAPHY, SATELLITE TRACKING/(U)NAFA SATELLITE TRACKING CAMERA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0925 STEP NO--CZ/0000/70/000/007/0241/0244

CIRC ACCESSION NO--AT0110646

UNCLASSIFIED

2/2 032 UNCLASSIFIED

CIRC ACCESSION NO--AT0110646 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR ESTIMATES THE PRECISION OF THE COORDINATES OF ARTIFICIAL SATELLITE FROM THE COMPARISON OF 118 ARTIFICIAL SATELLITE POSITIONS OBTAINED SIMULTANEOUSLY BY 3 OR4 PHOTOGRAPHIC CAMERAS NAFA 3C-25 LOCATED IN CLOSE VICINITY ONE OF THE OTHER. IT IS SHOWN THAT THE CAMERAS WITH A SPRING SHUTTER ARE STABILIZED ONLY AFTER THE 5TH EXPOSURE OF THE SATELLITE.

FACILITY: AKADEMIIA NAUK SSSR, ASTRONOMICHESKII SOVET, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 661.718.1:541.133

KABACHNIK, M. I., MATROSOV, Ye. I., MEDVED', T. Ya., BISAREVA, S. A., and ROMANOVA, I. B., Institute of Organoelemental Compounds, Academy of Sciences USSR, Moscow

"Acid-Base Properties of Tetraalkyl(Aryl)alkylenediphosphine Dioxides"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 3, 1972, pp 361-365

Abstract: Potentiometric titration was carried out with perchloric acid in [illegible] series of alkylene-diphosphine dioxides with different numbers of methylene links in a bridge of a general formula $R_2P(O)-(CH_2)_n-P(O)R_2$ (where: n = 1-4, R = C_6H_5, C_4H_9, C_2H_5). Protonation proceeds in all cases through a stage of ring formation with an intramolecular hydrogen bond and participation of the both phosphoryl groups. On the curves of potentiometric titration of the phosphine dioxides with propylene and butylene bridges (n = 3, 4) there appears in the acidic region the second potential jump, which, apparently, corresponds to a process connected with ring cleavage and protonation of the second phosphoryl group. The values of pKa (CH_3NO_2) of the second stages substantially differ from the first ones. In this respect the investigated phosphine dioxides exhibit a definite similarity to the

1/2

USSR

KABACHNIK, M. I., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 3, 1972, pp 361-365

behavior of dibasic carboxylic acids in which the formation in monoanions of intramolecular hydrogen bonds leads to a considerable difference of K_1 and K_2.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--LEAD ACID BATTERY ELECTRODES -U-

AUTHOR-(05)-YEMELYANOV, N.M., SMOLKOVA, V.S., ROMANOVA, I.L., SELITSKIY, I.A., RUSIN, A.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,200

REFERENCE--OTDRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--26JAN70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, BATTERY ELECTRODE, LEAD, LEAD OXIDE, SULFURIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1782 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0109743

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0109743

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ELECTRODES ARE PREPD. BY MIXING PB OXIDES WITH H SUB2 SO SUB4, SMEARING THE MIST. ONTO A LATTICE, DRYING, FORMING, REPEATED DRYING, AND INTRODUCING A BINDER. THE DRIED OUT PLATES ARE SATD. IN THE BINDER SOLN., WITH SUBSEQUENT REMOVAL OF THE SOLVENT. FACILITY: SCIENTIFIC RESEARCH STORAGE BATTERY INSTITUTE.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--USE OF A CALIBRATION HETERODYNE IN DISPERSION INTERFEROMETERS -U-

AUTHOR-(02)-SHTERN, D.YA., ROMANOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO ELECTRONICS), 1970, NO 2, PP 227-232

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--INTERFEROMETER, ELECTRIC FILTER, TEST INSTRUMENTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1890 STEP NO--UR/0109/70/000/002/0227/0232

CIRC ACCESSION NO--AP0130717

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD FOR CONSTRUCTING DISPERSION INTERFEROMETERS WITH THE USE OF A CALIBRATION HETERODYNE IS EXAMINED AND THE BASIC RELATIONS ARE PRESENTED. FORMULAS ARE GIVEN WHICH MAKE IT POSSIBLE TO EVALUATE THE PHASE STABILITY OF THE INTERFEROMETER RECEIVER. IT IS FOUND THAT A TWO SECTION FILTER WITH COUPLING (DETUNING) COEFFICIENT 1 0.6 HAS THE BEST PHASE CHARACTERISTIC. THE BASIC CONCLUSIONS OF THE STUDY ARE ALSO APPLICABLE TO OTHER FORMS OF PHASE SYSTEMS.

UNCLASSIFIED

USSR

UDC 577.3

MEYSEL', M. N., MOKRNACH, V. O., VAKINA, I. P., SELIVERSTOVA, L. A., BORODINA, V. M., and ROMANOVA, L. L., Institute of Microbiology, Academy of Sciences USSR, and Botanical Institute imeni V. L. Komarov, Academy of Sciences USSR

"The Mechanism of the Antimicrobal Action of Biologically Active Iodine Compounds"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 71, pp 819-829

Abstract: Bacteriological, phase-contrast, fluorescence, and electron microscope investigations revealed that the antimicrobal activity of iodine compounds is due to the positive monovalent iodide ion (I^+) and not to molecular iodine (I_2). The most active substances, such as iodine-potassium iodide and its compound with polyvinyl alcohol (iodinol), as well as oxidized hydroiodic acid and its compound with polyvinyl aocohol, readily penetrate yeast and bacterial cells and by combining with oxidizing the mitochondria, intracellular polysaccharides, and membrane lipoproteins, suppress and eventually completely inhibit the respiration of the cells.

1/1

USSR

UDC 669.294.5.293.018.5

ZHIKHAREV, Yu. V., KOVALEV, K. S., NOVIKOVA, S. M., ROMANOVA, N. A., CHUPRIKOV, A. V.

"Study of the Possibility of Replacing Tantalum Foil Used for Manufacture of Dry Electrolytic Condensers With Tantalum-Niobium Alloy Foil"

Nauchn. Tr. N-i. i Proyektn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 66-70. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I788 by the authors).

Translation: The permissible content of Nb in Ta which does not worsen the special characteristics of condenser foil is determined. A possible area of application of foil of Ta-Nb alloys in condensers of various capacities is indicated. The basic electrical characteristics of dry condensers of various capacities made of Ta-Nb alloys are presented. 2 figs; 4 tables; 3 biblio refs.

1/1

USSR

Heat Treatment

UDC 669.295.018.29.621.785

ZHIKHAREV, V. V., YEVSEYEVA, I. A., CHUPRIKOV, A. V., ROMANOVA, N. A., PAVLUSHINA, G. M., OSADCHIY, V. B.

"Influence of Heat Treatment on Special Properties of Titanium Foil"

Nauchn. Tr. N-i. i Proyektn. In-t Redkometal. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 83-87. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I695 by the authors).

Translation: The influence of heat treatment on the special properties of Ti foil designed for the production of solid electrolytic condensers is studied. 3 figs; 1 table, 4 biblio refs.

1/1

USSR

UDC: 621.319.4

ZHIKHAREV, Yu. V., KOVALEV, K. S., NOVIKOVA, S. M., ROMANOVA, N. A., CHUPRIKOV, A. V.

"Investigation of the Possibility of Substituting Tantalum-Niobium Alloy Foil for the Tantalum Foil Used in Making Dry Electrolytic Capacitors"

Nauchn. tr. N.-i. i proyektn. in-t redkomet. prom-sti (Scientific Works of the Scientific Research and Design Institute of the Rare Metals Industry), 1971, 32, pp 66-70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V328)

Translation: The authors consider the possibility of substituting tantalum--niobium alloys for the tantalum used in making capacitor foil. An investigation is made of the effect which the niobium content in tantalum has on the special electrical properties of capacitor foil. It is shown how the heat treatment temperature affects the properties of foil made from tantalum--niobium alloys. The permissible concentration of niobium in tantalum is determined which does not have an adverse affect on the special characteristics of capacitor foil. The potential field of application of foil made from niobium-tantalum alloys in capacitors of various ratings is indicated. The basic electrical characteristics are given for dry capacitors of various ratings made from tantalum-niobium alloy foil. Two illustrations, four tables. Resumé.

1/1

USSR

BELYAKOV, A. A., LYUBARSKIY, V. YA., and ROMONOVA, N. A.

UDC 621.394.4

"Group Operation of Discrete Channels in a Data Transmission System"

Moscow, Elektrosvyaz', No 11, 1970, pp 67-73

Abstract: The authors consider a method for constructing group equipment for data transmission which would reduce the volume of hardware needed at central information processing stations. A block diagram is given for the group units ensuring the operation of parallel channels with noise-proof coding and automatic redemand of combinations accepted with errors. A diagram is given for the relationship between circulation time with respect to the operative memory unit and the maximal number of directions which can be serviced by group units under conditions of the single-digit method of processing accepted information. The number of directions increases two to three times by using a two or three digit method for processing accepted information. A diagram is also given for the distribution of the time of an operational memory unit among the various functional units within the direction processing cycle along with the block diagrams for the sending and receiving sections of units for coupling with the computer and the communication channels. Original article: six figures, two formulas, and three bibliographic entries.

1/1

USSR

UDC 669.018.25(075)

ROMANOVA, N. I., CHEKULAYEV, P. G., DUSEV, V. I., LIVSHITS, T. A., and KURDOV, M. N.,

"Metal Ceramic Hard Alloys"

Metallokeramicheskiye Tverdyye Splavy (English Version Above), Metallurgiya Press, 1970, 352 pages

Translation of Annotation: This book presents in brief form the basic principles of the production and application of metal ceramic hard alloys. Information is presented on the initial raw material, and methods are described for producing powders of metals and carbides used in the manufacture of hard alloys.

Methods of grinding the initial materials and methods of preparing the mixtures and pressing them are described. Description are given of processes occurring during sintering of alloys, and methods of treating hard alloy products. Areas of their application in the metal working and mining industries are described. Methods of quality testing of products during preparation of hard alloys are discussed.

The book is designed as a teaching aid for professional and technical schools training workers in the production of metal ceramic hard alloys. 94 figs; 51 tables; 19 biblio. refs. 1/10

USSR

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

TABLE OF CONTENTS

		Page
Foreword		7
Introduction		9
Chapter I.	Raw Material for Production of Metal Ceramic Hard Alloys	11
	1. Basic and Secondary Materials	11
	2. Production of Tungsten Anhydride and Ammonium Paratungstenate	11
	3. Production of Cobalt Oxide	16
	4. Production of Titanium Dioxide	19
	5. Production of Black	23
Chapter II.	Methods of Producing Powders and Properties of Powder Materials	24
	6. Principles of the Grinding and Crushing Process	24

USSR

ROMANOVA, M. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

Chapter II.

7. Design of Coarse and Fine Crushers 26
8. Design of Mills 30
9. Basic Properties of Powder Materials 35

Chapter III. Technology of Manufacture of Powders of Tungsten, Cobalt and Nickel 46

10. Physical-Chemical Principles of Reduction 46
11. Reduction of Tungsten Oxides 47
12. Reduction of Oxides of Cobalt and Nickel 53
13. Apparatus and Test-Measurement Devices Used in Reduction of Oxides 54

Chapter IV. Technology of Manufacture of Refractory Metal Carbides 57

14. Properties of Carbides 57

3/10

USSR

ROMANOVA, N. I., et al., Metallokeranicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

15. Methods of Production of Carbides 58
16. Tungsten Carbide 61
17. Technology of Production of Tungsten Carbide 63
18. Production of Titanium Carbide 65
19. Production of Titanium-Tungsten Carbide .. 66

Chapter V. Technology of Preparation of Mixtures 68

20. Mixing Methods 69
21 Processes Occurring During Grinding of Mixtures 71
22. Dry and Wet Grinding 73
23. Purpose of Grinding Bodies and Nature of Their Motion in Grinding Units 74
24. Types of Grinding Bodies, Sizes and Compositions 77
25. Influence of Degree of Grinding on Physical and Mechanical Properties of Alloys 78

USSR

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

Chapter V. (Continued)

26. Influence of Various Factors on Intensity of Grinding 81
27. Means of Intensifying Grinding of Mixtures 83
28. Calculation of Charges for Preparation of Mixtures 84
29. Technology of Preparation of Mixtures 88
30. Drying of Mixtures After Grinding 89
31. Screening of Mixtures 93
32. Types of Reject Mixtures and Methods of Avoiding Them 97

Chapter VI. Technology of Preparation of Products of Hard Alloys 103

33. Types of Hard Alloy Products 105
34. Methods of Pressing 104
35. Properties of Pressed Products 112

5/10

USSR

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

Chapter VI. (Continued)

36. Influence of Pressed Briquette Density on Properties of Products after Sintering 117
37. Preparation of Mixtures for Pressing 118
38. Technology of Introduction of Plasticizer to Mixture 119
39. Pressing of Mixtures 124
40. Principles of Calculation and Design of Press Molds 133
41. Types of Reject Products 140

Chapter VII. Technology of Sintering of Products 144

42. The Essence of Sintering 144
43. Graininess of Carbide Phases 151
44. Influence of Sintering Atmosphere on Alloy Composition 154

6/10

USSR

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy. Metallurgiya Press, 1970, 352 pages

Chapter VII. (Continued)

45. Influence of Sintering Conditions on Alloy Properties 158
46. Technology of Sintering 158
47. Equipment used for Sintering of Products in Hydrogen 163
48. Technology of Sintering of Products in a Vacuum 166
49. Activation of Sintering 169
50. Types of Rejects in Sintering, Methods of Correction and Processing of Waste 170

Chapter VIII. Quality Testing of Manufacture of Hard Alloy 178

51. Metallographic Testing of Hard Alloy Quality 178
52. Determination of Density 194
53. Determination of Coercive Force 196
54. Determination of Hardness 199

7/10

USSR

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

Chapter VIII. (Continued)

55. Determination of Strength Limit in Bending 203
56. Testing of Hard Drilling Alloys 205
57. Testing of Hard Alloy Plates for Metal Working Tools 206

Chapter IX. Use of Hard Alloys in Metalworking Industry 209

58. Primary Properties of Hard Alloys 209
59. Working of Metals by Cutting 227
60. Chipless Working of Metals 236

Chapter X. Methods of Working Hard Alloys

61. Classification of Methods 247
62. Chemical Mechanical and Electrical-Chemical-Mechanical Methods 247
63. Electric Spark Method 249
255

8/10

USSR

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

Chapter X. (Continued)

64. Ultrasonic Method of Working 266
65. Abrasive and Diamond Working 267

Chapter XI. Sharpening and Finishing of Hard Alloy Tools 309

66. General Information on Sharpening of Tools 309
67. Sharpening Machines 311
68. Selection of Characteristics of Sharpening Disc and Modes of Abrasive and Diamond Sharpening of Hard Alloy Tools 313
69. Selection of Characteristics of Finishing Materials and Modes of Finishing Hard Alloy Tools 317
70. Standard Technological Processes of Sharpening and Finishing Hard Alloy Tools 321
71. Operation of Sharpening Equipment and Tools 322

9/10

ROMANOVA, N. I., et al., Metallokeramicheskiye Tverdyye Splavy, Metallurgiya Press, 1970, 352 pages

Chapter XII. Use of Hard Alloys in Mining 331

72. Methods of Drilling Blast Holes and Bore Holes 331
73. Inpact Drilling Tools 332
74. Rotary Drilling Tools 335
75. Shapes and Dimensions of Hard Alloy Plates for Drilling Tools 342

Bibliography 352

10/10

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INFLUENCE OF POSTTREATMENT STORAGE ON THE FREQUENCY OF ETHYLENIMINE INDUCED CHROMOSOMAL ABERRATIONS AND GENE MUTATIONS IN BARLEY -U-

AUTHOR-(02)-GARINA, K.P., ROMANOVA, N.I.

COUNTRY OF INFO--USSR

SOURCE--MOL. GEN. GENET. 1970, 106(2), 93-105

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT GENETICS, MUTAGEN, ETHYLENE, IMINE, CHLOROPHYLL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0056 STEP NO--BU/0000/70/106/002/0093/0105

CIRC ACCESSION NO--AP0125891

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125891

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DRY SEEDS OF SPRING BARLEY VARIETY MOS 121 WERE INDUCED TO MUTATE BY SOAKING FOR 3 HR IN ETHYLENIMINE (2.3 TIMES 10 PRIME NEGATIVE3 OR 9.3 TIMES 10 PRIME NEGATIVE3,MU), WASHED IN RUNNING TAP WATER FOR 30 MIN, DRIED, AND PLACED IN A DESICCATOR OVER GRANULATED KOH. GERMINATED SEEDS WERE EXAMD. AFTER TREATMENT OR STORAGE FOR 6-46 DAYS. CHROMOSOME CHANGES WERE STUDIED DURING ANAPHASE WITH PREPNS. FROM SHOOT TISSUE. A WAVE TYPE MUTABILITY EFFECT WAS OBSERVED, WITH STATISTICALLY SIGNIFICANT CHANGES IN THE LEVEL OF CHROMOSOME REARRANGEMENTS, OF CHLOROPHYLL MUTATIONS, DEATH RATE AND FERTILITY OF M1 PLANTS. THE MAX. GENETIC EFFECT WAS FOUND AT THE 18TH DAY OF STORAGE AND AFTER THIS TIME POTENTIAL CHANGES WERE REPAIRED. THE CHLOROPHYLL MUTATIONS EXHIBITED BOTH CHANGING FREQUENCY AND SPECTRUM. THUS, BOTH GENE AND CHROMOSOME REARRANGEMENTS APPEAR FIRST AS POTENTIAL CHANGES.

FACILITY: INST. GEN. GENET., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.: AP0042557

Ref. Code: JR0293

JPRS 52162

Effect of Spaceflight Factors on Barley Seeds

(Abstract: "Effect of Spaceflight Factors on Barley Seeds," by K. P. Garina and N. I. Romanova; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 158-159)

A study was made of the effect of spaceflight factors on air-dried seeds of bifarious barley, variety MOS-121. The experimental seeds were in spaceflight for five days with a maximum distance of about 300 km from the earth. The control seeds were at the cosmodrome but did not participate in the flight. After the experiment ended the experimental and control seeds were cultivated in Petri dishes in tap water at +24°C. The rootlets, attaining 8-10 mm in length, were fixed in a mixture of absolute alcohol (3 parts) and glacial acetic acid (1 part). In fixing the experimental rootlets allowance was made for the possibility of a stimulating effect of spaceflight factors on their rate of growth. Analysis of anaphase and early telaphase in the primary rootlets revealed a statistically reliable increase in the number of chromosomal rearrangements in the experiment in comparison with the control. In the control in 3,209 examined anaphases there were 87 different rearrangements, that is, 2.71 percent, whereas in the experiment in 3,524 anaphases the corresponding figure was 3.97 percent. The difference

1/2

Reel/Frame 19760528

06

AP0042557

was statistically reliable. Thus, in the experimental study there was no increase in the number of chromosomal rearrangements. However, the number of individual fragments increased with statistical reliability. There was an increase in the number of cells with multiple breakages of chromosomes and other impairments in mitosis. In addition to chromosomal changes, detected in a cytogenetic analysis, there was a stimulating effect of space-flight factors on the germination and sprouting energy of seeds. For example, the germination of seeds in the control was 42.85 percent and in the experiment it was 68.57 percent. The experimental seeds began to sprout considerably earlier than the control seeds; the rate of growth of rootlets and sprouts was accelerated. The rootlets of the experimental seeds attained lengths from 1 to 2 cm 45 hours after wetting and the control seeds after 54 hours.

19760529

2/2

Hydrobiology

USSR UDC 595.3:591.5+591.9(262.81)

ROMANOVA, N. N., All Union Scientific Research Institute of Marine Fishing and Oceanography, Moscow

"Some Characteristics of the Ecology and Distribution of Crustaceans of Arctic Origin in the Caspian Sea"

Moscow, Zoologicheskiy Zhurnal, Vol 49, No 7, Jul 70, pp 970-979

Abstract: A brief discussion of the time and routes of penetration of Arctic crustaceans into the Caspian Sea is presented, and three families of amphipods are reported. These Arctic crustaceans are found at depths of 50 to 200 m with a constant bottom temperature and mainly clayey-sandy ground. Gammaracanthus loricatus caspius is the most stenothermal species (5 to 8°C). Pseudalibrotus platyceras and Pseudalibrotus caspius are less so (5 to 10°C), while Pontoporeia affinis micropthalma and Mesidotea entomon glacialis are the most eurythermal (5 to 11°). The temperature limit for occurrence of Arctic crustaceans in the Caspian is 11°C. They do not occur above this temperature, even when other conditions are favorable.

1/1

1/2 049 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--VERTICAL PROPAGATION OF SHORT ACOUSTIC WAVES IN A REAL ATMOSPHERE -U-

AUTHOR--ROMANOVA, N.N.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, FIZIKA ATMOSFERY I OKEANA, VOL 6 FEB 1970, P 134-145

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--WAVE PROPAGATION, ACOUSTIC WAVE, REYNOLDS NUMBER, MACH NUMBER, ATMOSPHERE, SHOCK WAVE, ATMOSPHERI TEMPERATURE, HEATING, EARTHQUAKE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1906

STEP NO--UR/0362/70/006/000/0134/0145

CIRC ACCESSION NO--AP0108236

UNCLASSIFIED